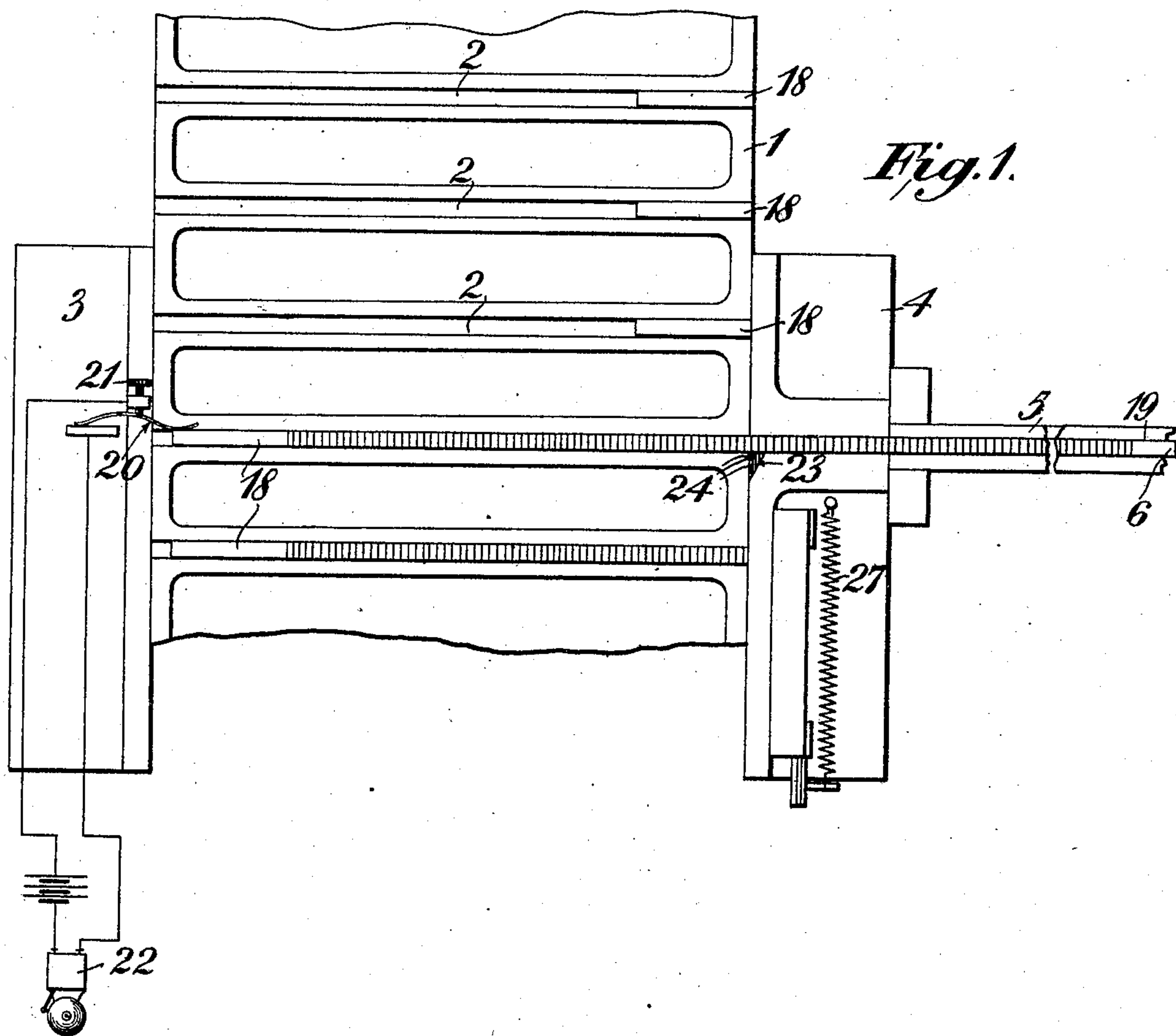


No. 785,648.

PATENTED MAR. 21, 1905.

E. A. ADCOCK.
TYPE SETTING MACHINE.
APPLICATION FILED MAY 31, 1904.

3 SHEETS—SHEET 1.



Witnesses.
Wm Henry Sumner
E. Blough

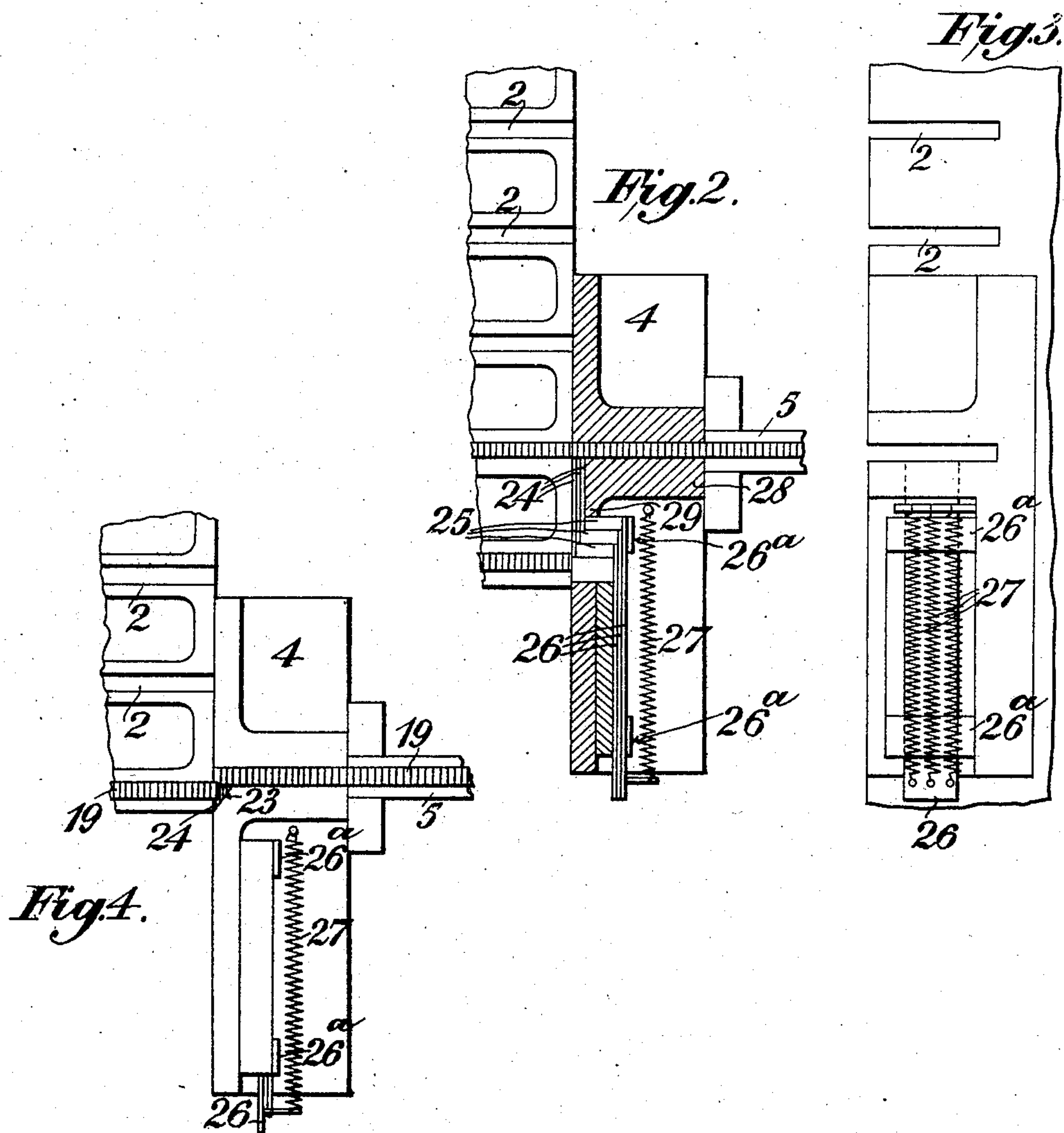
Inventor.
E. A. Adcock.
Per W. Lloyd Webb
Attorney.

No. 785,648.

PATENTED MAR. 21, 1905.

E. A. ADCOCK.
TYPE SETTING MACHINE.
APPLICATION FILED MAY 31, 1904.

3 SHEETS—SHEET 2.



Witnesses
W. H. Linn
S. C. Linn

Inventor.
E. A. Adcock
Per M. H. Linn
Attorney.

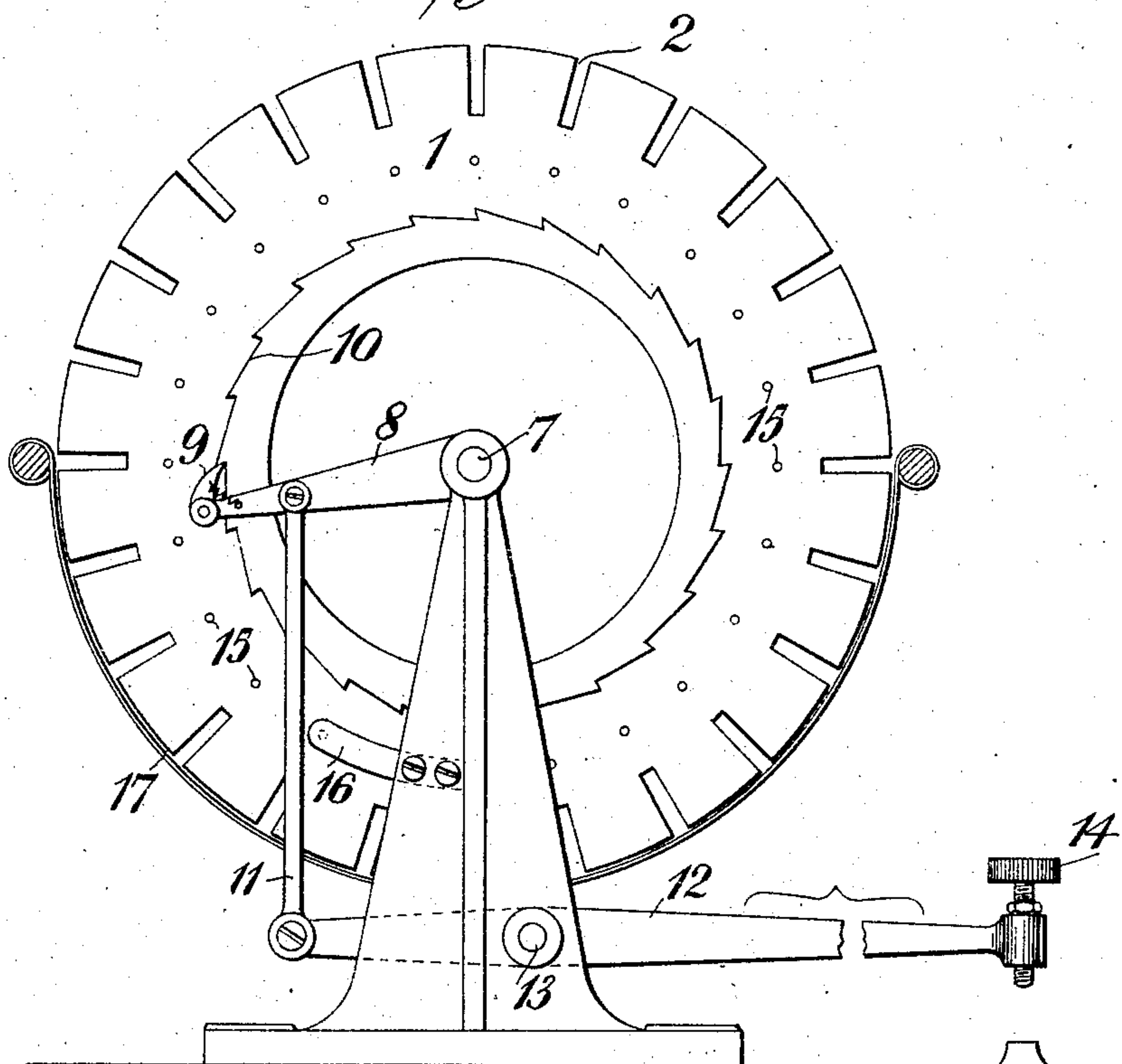
No. 785,648.

PATENTED MAR. 21, 1905.

E. A. ADCOCK.
TYPE SETTING MACHINE.
APPLICATION FILED MAY 31, 1904.

3 SHEETS—SHEET 3.

Fig. 5.



Witnesses
W. Henry Sumner
E. Blough

Inventor
E. A. Adcock
Per W. H. d. W. H.
Attorney

UNITED STATES PATENT OFFICE.

EDWARD AUGUSTUS ADCOCK, OF READING, ENGLAND, ASSIGNOR TO
PULSOMETER ENGINEERING COMPANY, LIMITED, OF READING,
ENGLAND.

TYPE-SETTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 785,648, dated March 21, 1905.

Application filed May 31, 1904. Serial No. 210,555.

To all whom it may concern:

Be it known that I, EDWARD AUGUSTUS ADCOCK, a subject of the King of Great Britain and Ireland, residing at Reading, in the county of Berks, England, have invented Improvements in Type-Setting Machines, of which the following is a specification.

This invention consists of improvements in type-setting machines.

10 In a type-setting machine according to this invention there is used, in conjunction with a stationary type-trough into which types are allowed to fall by the operation of the keys of the machine and along which a row of types
15 is fed by a packing or feeding device in the usual way, a type carrier or magazine that is arranged to be moved in an intermittent manner across the delivery end of the stationary trough by suitable operating means
20 and is formed with a number of type-troughs into each of which in turn types can be pushed from the stationary trough to form a line of types, the arrangement being such that the magazine can be moved into position to bring
25 a type-trough therein into line with the stationary type-trough, so that it can receive types therefrom, and when it has been charged with sufficient types to form a line of types the magazine can be moved forward a step,
30 so as to cut off the line of types from the row of types in the stationary trough and bring the next empty type-trough in the magazine into line with the stationary type-trough to receive another line of types, after which the
35 operation of cutting off such line of types and bringing another empty trough into position for use can be repeated.

In order to prevent a type that may be located partly in the stationary trough and
40 partly in a movable type-trough at the moment when it is desired to move the type-magazine forward from acting as a key to prevent the movement of the magazine, that face of a fixed guide at which the delivery
45 end of the stationary trough terminates and against which the type-magazine works is formed at the forward side of the said trough with a lateral notch that is made to be V-shaped in plan, with one side or surface in-

clined in an outward and forward direction 50
and across which extend in a horizontal direction a set of thin parallel type-supporting plates the total thickness of which is slightly greater than that of the thickest type being dealt with and each of which is thinner than 55
the thinnest type being dealt with and which are separately pressed in a yielding manner, as by springs, toward the forward sides of the types that are opposite to the notch. The arrangement is such that when a type-trough 60
in the magazine is in line with the stationary type-trough, so that types can be forced along the latter trough by a packing or feeding device in the ordinary way into the movable trough against the resistance of a yielding friction-block in the movable trough, the set of supporting-plates will support the forward sides of the types as they pass across the notch and prevent them from falling forward out of position; but when the magazine 70
is operated so as to cut off the line of types so formed therein and bring the next empty trough into position for use if a type be partly in the moving trough and partly in the stationary trough it will be caused by the movement of the magazine to force back the supporting plate or plates then bearing against it and come into contact with the inclined deflecting surface of the notch, which will force it sidewise completely into the trough in the 80
magazine against the action of the friction-block and without damaging the type, and so permit the magazine to be moved forward a step to bring the next type-trough therein into position for use. 85

As will be obvious, a movable type-magazine, a stationary type-deflecting device, and yielding type-supporting devices to operate in the manner described can be constructed in various forms. 90

The type-magazine may be arranged to work between a pair of fixed guides and be a segment of a wheel mounted to oscillate or be a complete wheel mounted to rotate and have in each case across its periphery a series of parallel transverse type-troughs, the magazine being arranged to be moved forward in an intermittent manner by any suit-

able means, such as pawl-and-ratchet mechanism or a spring under the control of a pawl-and-ratchet arrangement operated at the required times by the depression of a key.

5 When the magazine is a complete wheel, its lower portion may be closely surrounded by a stationary curved support—for example, a curved metal sheet or a strip of flexible material, such as fabric or india-rubber—to prevent the type from falling out of the troughs when these are partly or wholly inverted. Each of the troughs in the magazine is fitted with a friction-block that can be readily pushed along the trough in a lateral direction, but will offer sufficient resistance to movement to serve as a support to prevent types forced into the trough from falling. Each friction-block may be arranged to close the circuit of an electric bell or operate a mechanical bell or other audible signal when sufficient types have been forced into the corresponding trough to form a line of types.

The type-supporting plates may advantageously be arranged to work in a horizontal recess extending across the V-shaped notch in the fixed guide and located between the upper and lower ends of the notch and be each connected by a bar at right angles to it to a slide mounted to work backward and forward in guides and connected to a spring that tends to force the slide and supporting-plate backward toward the forward side of the line of types in the stationary channel and toward a stop, against which the inmost connecting-bar normally bears, so as to prevent the supporting-plates from being pressed against the type and interfering with the lateral feeding movement thereof.

One example of apparatus according to this invention is represented in the accompanying drawings, whereof—

Figure 1 is a plan view. Fig. 2 is a corresponding partial sectional view. Fig. 3 is a corresponding side view of the apparatus as it appears after removal from the main portion of the stationary trough. Fig. 4 is a view similar to a portion of Fig. 1, but showing the type-magazine after it has been moved forward to a slight extent; and Fig. 5 is a side view representing the means for intermittently moving the type-magazine.

In the example the type-magazine 1 is cylindrical and comprises a number of parallel transverse troughs 2 at equal distances apart.

55 The magazine 1 is mounted to work between two fixed guides 3 and 4, of which one—namely, 4—forms the delivery end of the stationary type-trough 5. For bringing each of the type-troughs 2 into line with the type-trough 5, so that the former can receive types from the latter as they are pushed laterally therein by a pusher 6 in the ordinary manner, there is mounted on the axle 7, Fig. 5, of the magazine 1 a lever 8, which carries a pawl 9, adapted to engage with a ring of teeth 10,

fixed to the magazine 1 and which is connected by a link 11 to a lever 12, pivoted at 13 and provided with a key 14, the depression of which will cause the magazine 1 to be moved about its axis to such an extent as to move one of the type-troughs 2 out of line with the type-trough 5 and to bring another type-trough 2 into line therewith. The magazine 1 is provided with an annular series of recesses 15, one of which is adapted to be engaged by a spring-catch 16 whenever a type-trough 2 is in line with the type-trough 5. The lower part of the magazine 1 is closely surrounded by a stationary curved support 17, adapted to prevent types from falling out of any trough 2 that is partly or wholly inverted. In each of the troughs 2 there fits a friction-block 18, that can be easily pushed along in its trough by the types 19 as they are moved along by the eccentric packing device 6, but will offer sufficient resistance to their movement to prevent the types forced into the trough from falling in the direction of their motion. To the support 3, which is at that side of the magazine which is remote from the trough 5, there is secured a spring-contact 20, which is adapted when a trough opposite to it has received sufficient types to be forced by the corresponding friction-block 18 into contact with an electrical terminal 21, so as to close an electric circuit comprising a bell 22, and thereby to cause the bell to ring.

For preventing a type located partly in the trough 5 and partly in a type-trough 2 opposite to it from acting as a key between the magazine and the fixed guide 4 the face of the fixed guide 4 adjacent to the magazine 1 is formed at the forward side of the trough 5 with a lateral notch which is made of V shape, as shown in Fig. 1, and has one side inclined in an outward and forward direction and across the notch so formed there extend so that their rear ends form part of a continuation of the forward wall of the trough 5 a set of thin parallel blades 24, the total thickness of which is slightly greater than that of the thickest type that has to be dealt with and each of which is thinner than the thinnest of such types. Each of the blades 24, which are mounted to slide at right angles to the trough 5, is connected by a bar 25 at right angles thereto to a slide 26, which is mounted to work backward and forward in guides 26^a and is connected to one end of a separate spring 27, the other end of which is attached to a fixed part 28. The effect of the springs 27 is to keep the foremost bar 5 normally against a stop 29, the next bar 25 pressed against the foremost bar 25, and the third bar 25 pressed against the second bar 25. When the bars 25 are in the position indicated, the rear ends of the plates 24 form a continuation of the forward wall of the trough 5, as shown in Fig. 2.

The operation of the apparatus is as follows: When one of the type-troughs 2 of the magazine 1 is stopped in line with the type-trough 5 and the types are allowed to fall in succession into the type-trough 5 in the ordinary manner, the types 19 in the trough 5 are pressed laterally therein by the pusher 6 into the magazine-trough 2 that is opposite to the trough 5, and they consequently force laterally the corresponding friction-block 18, which prevents them from falling in the direction of their motion. When the block 18 has thus been moved sufficiently to press the spring-contact 20 into contact with the terminal 21, the bell 22 is rung, and the operator being thus warned that sufficient types have been fed into the trough 2 that is opposite to the trough 5, depresses the lever 12 by means of the key 14, and thereby causes the magazine 1 to rotate to such an extent as to move the trough 2 that has been opposite to the trough 5 away therefrom and to bring the succeeding trough 2 into line with the trough 5. This movement of the magazine 1 causes the spring 16 to move out of engagement with one recess 15 and into engagement with the next succeeding one, whereby the trough 2 is adjusted with accuracy in relation to the trough 5. If when the magazine 1 is being moved forward, as just described, a type 19 is partly in the trough 2 in question and partly in the trough 5, as shown in Fig. 1, it forces forward, as shown in Fig. 4, the plate or plates 24 that is or are bearing against it, and on the further movement of the magazine 1 the type in question comes into contact with the inclined side 23 of the aforesaid notch, and this side 23 by acting on the type forces the whole of the types that are in the corresponding trough 2, together with the corresponding friction-block 18, along in the trough 2 until the type that has been projecting has been moved completely into the trough in question. After a projecting type has thus been sufficiently moved laterally by the incline 23 any plate 24 previously displaced by such type will be forced back into its normal position by its spring 27. In this way while support is given to the types quite up to the magazine 1 a type partly in the stationary trough and partly in one of the troughs of the magazine is prevented from locking the magazine in position.

What I claim is—

1. In a type-setting machine, the combination of a stationary type-trough, a type-magazine comprising a number of type-troughs and mounted and arranged to be moved so that any of its type-troughs can be brought into a position in which it can receive types from said stationary type-trough, feeding means for feeding types from said stationary type-trough into one of said type-troughs of said magazine so brought into position, means for moving said magazine so as to

take one of its type-troughs out of said position and to bring another of its type-troughs thereinto, projections at the delivery end of said stationary trough, means for forcing said projections toward said stationary trough so as to cause them to extend across a gap between said magazine and the forward wall of said stationary trough, means for preventing said projections from being pressed against type opposite to them and fully located in said stationary trough so as to impede the lateral movement of such type, and means for causing a type partly in said stationary trough and partly in one of said troughs in said magazine and bearing against one or more of said projections to be by the moving of said magazine as aforesaid moved along in said magazine-trough until fully located therein.

2. In a type-setting machine, the combination of a stationary type-trough, a type-magazine comprising a number of type-troughs and mounted and arranged to be moved so that any of its type-troughs can be brought into a position in which it can receive types from said stationary type-trough, feeding means for feeding types from said stationary type-trough into one of said type-troughs of said magazine so brought into position, means for moving said magazine so as to take one of its type-troughs out of said position and to bring another of its type-troughs thereinto, projections located at the delivery end of said stationary trough and adapted to guide types being fed by said feeding means toward a type-trough of said magazine brought into said position, means for forcing said projections separately toward said stationary type-trough, and an incline adapted to cause a type partly in said stationary trough and partly in one of said troughs of said magazine and bearing against one or more of said projections to be by the moving of said magazine as aforesaid moved along in said magazine until fully located therein.

3. In a type-setting machine, the combination of a stationary type-trough, a type-magazine comprising a number of type-troughs and mounted and arranged to be moved so that any of its type-troughs can be brought into a position in which it can receive types from said stationary type-trough, feeding means for feeding types from said stationary type-trough into one of said type-troughs of said magazine so brought into position, means for moving said magazine so as to take one of its type-troughs out of said position and to bring another of its type-troughs thereinto, an incline at the end of said stationary trough adjacent to said magazine and leading from said stationary trough to said magazine, parallel projections extending across said incline, means for forcing said projections separately toward type being fed by said feeding means toward one of the troughs of said magazine,

and means for preventing said projections from impeding types being so fed, said projections being adapted, by a type situate partly in one of said troughs of said magazine
 5 and moved forward by the moving of said magazine as aforesaid, to be moved forward by said type so as to allow said type to bear against said incline and to be by it forced along in the trough of said magazine in which
 10 it is partly located until fully located therein.

4. In a type-setting machine, the combination of a stationary type-trough, a type-magazine comprising a number of type-troughs and mounted and arranged to be moved so that
 15 any of its type-troughs can be brought into a position in which it can receive types from said stationary type-trough, feeding means for feeding types from said stationary type-trough into one of said type-troughs of said
 20 magazine so brought into position, means for moving said magazine so as to take one of its type-troughs out of said position and to bring another of its type-troughs thereinto, parallel projections located at the delivery end of said
 25 stationary trough and adapted to guide types being fed by said feeding means toward a type-trough of said magazine brought into said position, slides equal in number to said projections, a connection between each of
 30 said projections and one of said slides, a spring connected to each of said slides and adapted thereby to force the corresponding one of said projections toward types being fed toward said stationary trough as aforesaid,
 35 and an incline adapted to cause a type partly

in said stationary trough and partly in one of said troughs of said magazine and bearing against one or more of said projections to be by the moving of said magazine as aforesaid moved along in said magazine until fully located therein.

5. In a type-setting machine, the combination of a stationary type-trough, a type-magazine comprising a number of type-troughs and mounted and arranged to be moved so that
 4 any of the type-troughs can be brought into a position in which it can receive types from said stationary type-trough, feeding means for feeding types from said stationary type-trough into one of said type-troughs of said
 5 magazine so brought into position, and in each of said type-troughs of said magazine a block adapted by friction therein to prevent types therein from falling in the direction of their
 5 motion when forced along therein by said feeding means.

6. In a type-setting machine, the combination of a cylindrical type-magazine comprising a number of parallel peripheral type-troughs and mounted and arranged to be
 6 turned about its axis, and a stationary support adapted to prevent types from falling out of any of said troughs of said magazine when such trough is partly or wholly inverted.

Signed at London, England, this 7th day
 6 of May, 1904.

EDWARD AUGUSTUS ADCOCK.

Witnesses:

H. D. JAMESON,
 A. NUTTING.